



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,525	03/04/2002	Marion Detert	104035.244767	6559

826 7590 02/26/2003

ALSTON & BIRD LLP
BANK OF AMERICA PLAZA
101 SOUTH TRYON STREET, SUITE 4000
CHARLOTTE, NC 28280-4000

EXAMINER

WILSON, DONALD R

ART UNIT	PAPER NUMBER
----------	--------------

1713

DATE MAILED: 02/26/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

10/090,525

Applicant(s)

DETERT ET AL.

Examiner

D. R. Wilson

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 13-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-12 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) # 7
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 412
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1713

DETAILED ACTION

Response to Restriction Requirement

1. Applicant's election with traverse of the inventions of Group I, Claims 1-12 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that both groups are to a product and not to a process of use, and that the groups are sufficiently related such that the burden imposed on the Examiner would be less than the burden imposed on applicant. This is not found persuasive because the restriction requirement is more properly based upon an intermediate-final product relationship as opposed to the product and process of use set forth by the previous Examiner.

Inventions of Group I and II are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as a flocculating agent and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant further traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

As to the burden on the examiner versus any burden on applicant, the issue is the burden on the Examiner, which applicant has provided no evidence or rationale that such a burden doesn't exist.

2. The requirement is still deemed proper and is therefore made FINAL. Claims 13-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention.

Election of Species Requirement

3. This application contains claims directed to patentably distinct species of comb polymers.

Art Unit: 1713

4. Applicant is required under 35 U.S.C. § 121 to elect a **single ultimate** disclosed specie of a comb polymer for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Where specific species are not identified in the claims applicant should elect specific specie from the specification. An alternative method of election is to identify an Example which collectively exemplifies the elected species. Currently, Claims 1-12 appear to be generic in their respective groups to the above species.

5. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

6. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

7. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Conclusion to Restriction/Election Requirement

8. During a telephone conversation with Mr. Andrew T. Meunier on 2/20/03 a provisional election was made with traverse to prosecute the invention of the specie as exemplified in Preparation Example 1. Affirmation of this election must be made by applicant in replying to this Office action.

Claim Rejections - 35 USC § 112, First Paragraph

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. ***Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for comb polymers wherein:***

- a. the polyester side-arms contain sulfonic acid groups at least partially neutralized, does not reasonably provide enablement for polyester side-arms containing sulphone groups at least partially neutralized,
- b. the main chains a polyacrylic acid, polymethacrylic acid, or an ester of these acids with C₁-C₂₂ aliphatic, cycloaliphatic or aromatic alcohols, does not reasonably provide enablement for main chains of polymeric aliphatic, cycloaliphatic and aromatic polycarboxylic acids and derivatives thereof,
- c. the side chains are attached to the main chain through ester linkages, does not reasonably provide enablement for polyester side chains attached to the main chain through an ether linkage (Claims 5-8, only), and
- d. side chains wherein the units "D" in the formulas of Claim 5 are the same or different, does not reasonably provide enablement for acid components optionally including combinations of two or more different acid components each having two terminal acyl groups (Claims 5-8, only).

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

11. In regards to (a), the only enablement in the specification is for comb polymers wherein the polyester side arms contain sulfonic acid groups which are at least partially neutralized. Sulphone groups are not acid groups, but rather an "-SO₂-" group bearing two organic radicals bonded to sulfur, and further it would be unclear how such groups are neutralized. Referring to sulfonic acid groups or their salts as sulphones is repugnant to the term's well known usage. (See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947). It is assumed in the examination discussed below that applicant intended sulphonic acid groups as opposed to sulphone groups. ✓

12. In regards to (b), polyacrylic acid, polymethacrylic acid, or an ester of these acids, are polymeric acrylic acid, methacrylic acid, or esters of these acids. Polymeric aliphatic, cycloaliphatic and aromatic polycarboxylic acids, would be polyanhydrides. Although such polyanhydrides are known, they would not be effective in the instant invention as they would not result in comb polymers. ✓

Art Unit: 1713

13. In regards to (c), the formulas shown in Claim 5 indicate an attachment of the polyester side chain through a peroxide linkage, i.e., "G" is a unit bearing two terminal oxygen atoms, whereas the only teaching in the specification is attachment through an ester group. It may be that applicant intended the "-O-" at the left end of each of the formulas to be a carbonyl group, i.e., "-C(O)-", which is enabled, but this isn't shown in either the claims or the specification.

14. In regards to (d), the language is at best unclear, but appears to be addressed to groups derived from diacids which contain keto groups which are not enabled in the specification.

Claim Rejections - 35 USC § 112, Second Paragraph

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. ***Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.***

17. The language of Claim 1 is indefinite because there is nothing specified in the side arms which constitute a group which can be neutralized. ✓

18. The language of Claims 3-4 are indefinite because given enough chemistry, almost any compound could be a derivative of the specified polyacids. Therefore it is unclear what compounds are included in "derivatives thereof". ND

19. Claim 4 is further indefinite because Claim 3 does not provide an antecedent basis for polyacrylic acid, polymethacrylic acid, or an ester of these acids. Further maleic acid, maleic anhydride and fumaric acid are not polymeric polycarboxylic acids, and therefore cannot be members of the specified Markush group. Further, the chemical structure of polynorbornenic acid is unclear. ND

20. The language of Claim 5 is indefinite because of the following:

a. The claim uses improper Markush groups. This may be overcome by inserting after "selected from" at each of the seven occurrences "the group consisting of". Further, when using ✓

Art Unit: 1713

the form "selected from the group consisting of", the conjunction prior to the last member needs to be "and", not "or", as is done in some of the groups.

When materials recited in a claim are so related as to constitute a proper Markush group, they should be recited in the conventional manner, or in the alternative. For example, "wherein R is a material selected from the group consisting of A, B, C and D" is a proper limitation, or alternatively, "wherein R is A, B, C or D" is also proper. See M.P.E.P. § 2173.05(h). ✓

b. It can not be told whether or not the "average molecular weights" are on a number average, weight average, or some other basis. The difference between weight average and number average molecular weights would be expected to be at least a factor of two for the polymers disclosed making the limits of the claims indefinite. ?

c. It is not seen that the comb polymers with the structures taught could possibly have a molecular weight as low as 200. ? NO

d. It is not seen that the unit "G" could possibly have the same molecular weight limitations as that of the comb polymer which necessarily contain multiple G units, in addition to other units. NO

e. In the definition of "G" the language is indefinite because of the language "--- can be the same or different ---", making it unclear as to whether the groups are the same or different. This can be overcome by substituting "are" for "can be". It is also noted that if they are the same, this is equivalent to either "k" or "m" being zero. ✓

f. In the definition of "D" it is unclear what is meant by "--- optionally including combinations of two or more different acid components ---" each having two terminal acyl groups. Presumably this would be a keto or polyketo group, which would not be comprising multiple acid components.

g. The definition of "T" is indefinite because "T" is not a compound but is rather a radical or group.

h. The definition of is indefinite because each "R¹ⁿ" would be a single ion and therefore could not be a combination of ions. Further, a Markush group is a closed group and doesn't then permit the inclusion of other members. It is also unclear what the additional ions are counter to. Presumably, applicant intends the "-SO₃R¹ⁿ" groups to be sulphonate salts, wherein "R¹ⁿ" is a cation. Claim 1 already specifies that the multiple "R¹ⁿ"s are at least a combination of lithium and

Art Unit: 1713

sodium cations. Thus, the "R¹"s cannot all be the same, and in addition to sodium and lithium ions optionally are other cations.

i. The definition of "R²" is confusing and unclear. For instance, is the first member of the Markush group simply an "-NH-R⁵ or -NR⁵₂" group, or is it some organic radical containing such groups. If the former, which appears to be the teaching of the specification, it could not be a cycloaliphatic amino functional group if R⁵ is limited to alkyl and aryl radicals as is currently stated. Similar confusion is present for other members of the group. Additionally, "-RCOOR⁶ⁿ" as defined is not a monocarboxylic acid group. It is also unclear as to what is included in ethoxylated sulphonated organyl radicals bridged via ether functions, and metal salts thereof.

21. Claims 6 and 8-12 are indefinite because as above, it can not be told whether or not the "average molecular weights" are on a number average, weight average, or some other basis.

22. Claim 7 is indefinite because of an improper Markush group. This could be overcome by inserting "the group consisting of" following "selected from". The language is further indefinite because there are no "amines which have "alkyl positions", rather there are "ammonium compounds".

Claim Rejections - 35 USC § 102(b)/§ 103(a)

23. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

24. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 1713

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

27. **Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO'055,**

EP'352 or EP'287. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15. WO'055 is equivalent to copending application 09/838,411.

28. WO'055 discloses and claims comb polymers such as are instantly claimed except for the limitation that the sulphonic acid groups are at least partially neutralized by a combination of lithium to sodium ions in a molar ratio of 0.1 and 50. (See Claims and Preparation Examples).

29. EP'352 and EP'287 disclose comb polymers which read on the instant claims except for the limitation that the sulphonic acid groups are at least partially neutralized by a combination of lithium to sodium ions in a molar ratio of 0.1 and 50. See for instance the Figure at page 11 (both references), Claims 1-5 (EP'352), and Claim 4 (EP'287).

30. In as much as it is taught that the ions can be either lithium or sodium (e.g., WO'055 Claim 3, EP'352 Claim 3, and EP'287 Claim 4), and lacking a showing of criticality of the ratio of ions in the range of the instant claims, it would have been obvious to one of ordinary skill in the art to use a combination of the ions taught to be equivalent by WO'055, EP'352, or EP'287 with an expectation of equivalent results.

31. **Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becherer.** As above, applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55.

32. Becherer discloses comb polymers obtained by condensation of a polyacrylic acid with sulfo substituted alcohols or acids in combination with other diols and acids to produce comb polymer with

Art Unit: 1713

sulphonic acid group containing polyester side chains (e.g., see examples). It is taught that the sulphonic acid groups are preferably present as a salt such as an alkali metal salt (col. 2, lines 3-41). Becherer is deficient in not teaching that the alkali metal salt is at least partially neutralized by a combination of lithium to sodium ions in a molar ratio of 0.1 and 50, as provided for in the instant claims. However, as above, lacking a showing of criticality of the ratio of ions in the range of the instant claims, it would have been obvious to one of ordinary skill in the art to use a combination of alkali metal the ions such as lithium and sodium with an expectation of equivalent results. Sodium salts are exemplified in the examples. The molecular weight limitations of the instant claims are also taught and or obvious (e.g., col. 2, lines 9-14).

Obviousness Double Patenting Rejection

33. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

34. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

35. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

36. ***Claims 1-12 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-4 of copending***

Application No. 09/838,411. The application is equivalent to WO'055. Although the conflicting claims are not identical, they are not patentably distinct from each other for the reasons discussed above in the rejection of claims over WO'055.

37. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Evidenc of Common Ownership

38. Claims 1-12 are directed to an invention not patentably distinct from Claims 1-4 of commonly assigned copending Application No. 09/838,411, which has a different inventive entity. The reasons are discussed above.

39. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302). Commonly assigned copending Application No. 09/838,411, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee is required under 37 CFR 1.78(c) and 35 U.S.C. 132 to either show that the conflicting inventions were commonly owned at the time the invention in this application was made or to name the prior inventor of the conflicting subject matter. Failure to comply with this requirement will result in a holding of abandonment of the application.

40. A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications filed on or after November 29, 1999.

41. Applicant is reminded of the new rules for evidence of common ownership set forth in the OG Notice of 12/26/01 "Guidelines Setting Forth a Modified Policy the Evidence of Common Ownership, or an Obligation of Assignment to the Same Person, as Required by 35 U.S.C. 103(c)" which states:

"Applications and references (whether patents, patent applications, patent application publications, etc.) will be considered by the examiner to be owned by, or subject to an obligation of assignment to the same person, at the time the invention was made, if the applicant(s) or an attorney or agent of record makes a statement to the effect that the application and the reference were, at the time the invention was made, owned by, or subject to an obligation of assignment to, the same person." (Underlining added.)

Art Unit: 1713

Other Comments

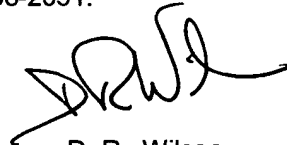
42. Applicant uses the term "organyl unit(s)", which is not specifically defined, nor is it a term commonly used. Lacking any arguments to the contrary the Examiner has interpreted this to simply mean an organic group.

Future Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. R. Wilson whose telephone number is 703-308-2398.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 703-308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications. The unofficial direct fax phone number to the Examiner's desk is 703-872-9029.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-2351.



D. R. Wilson
Primary Examiner
Art Unit 1713